

# Health, Food and Foodomics: A New Land for Analytical Chemistry

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The trilogy Health-Food-Foodomics is still a huge unexplored and unknown field that can provide impressive opportunities to Analytical Chemists [1]. In this work, we will present some of the latest Foodomics results related to the production and characterization of bioactive compounds from different natural sources against different human cancer cell lines [2-8]. Whole-transcriptome microarray studies followed by RT-PCR confirmation, proteomics analysis using nano-LC-MS, non-targeted whole-metabolome approaches based on LC-MS and CE-MS and metabolomic profiling approaches based on LCxLC-MS/MS analysis were employed to carry out the mentioned works. The results from these works enabled the identification of several differentially expressed genes alone and/or linked to changed metabolic pathways that were modulated by food ingredients in cancer cells, providing new evidences at molecular level on the antiproliferative effect of food compounds. These strategies represent a good example of the important challenges that the work on Health, Food and Foodomics brings to Analytical Chemistry in the postgenomic era.

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